

Post-Construction Peak Flow

Runoff Curve Number and Runoff

Thu Jun 27 17:40:48 2019

Project: WV Poultry Partners

By:

Date: 06/27/19

Developed - Less Detained Drainage Areas

1. Runoff Curve Number (CN)

Cover description	CN	Soil Group	Area(Acre)
Woods (Good)	70	C	61.370
Gravel Streets, Pads and Buildings	89	C	6.560 Includes Road A and Part of Pad 4
Pasture Grassland Range (Fair)	79	C	15.440
Row Crops - C (Good)	82	C	40.430

CN (weighted): 75.7

Total Area: 123.800 Acre

2. Runoff

Return Period: 1 YEAR

Rainfall, P: 2.48 in

Runoff, Q: 0.6682 in

Runoff Volume: 6.8937 Acre-Ft

Time of Concentration (SCS)

Thu Jun 27 16:06:39 2019

Project: WV Poultry Partners

By:

Date: 06/27/19

Developed Conditions

Curve Number : 76

Length of Flow : 4865.00 ft

Average Land Slope : 1.54 %

Time of Concentration : 1.707 hrs, 102.4 mins

Graphical Peak Discharge

Thu Jun 27 17:42:10 2019

1. Data:

Drainage area:.....A = 123.8000Acres

Runoff Curve Number:.....CN = 76

Time of Concentration:.....Tc = 102.40 min

Storm Type:..... = II

Pond and swamp areas spread

throughout watershed..... = 2.83 percent of A=> 3.5035 Acres

2. Frequency.....yr = 1

3. Rainfall,P(24-hour).....in = 2.48

4. Initial abstraction, Ia..... = 0.6316

5. Compute Ia/P..... = 0.2547

6. Unit peak discharge, qu.....csm/in = 222.630

7. Runoff,Q.....in = 0.6825

8. Pond & swap adjustment factor,...Fp = 0.75

9. Peak Discharge,qp.....cfs = 22.043

Conclusion

The increase in Runoff from the new Impervious areas is 110,991 CF. Total Basin Retention of 72 hours is 445,680 CF. Therefore, overall Peak Discharge for the 1-yr event is significantly decreased (to 22.043 cfs) as result of the Sediment Basin/SWM Controls.